

Name..... Index No.....  
School..... Sign.....  
Date.....

**451/1**  
**COMPUTER STUDIES**  
**PAPER 1**  
**TIME: 2 ½ HOURS**

*Kenya Certificate of Secondary Education (K.C.S.E)*

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**COMPUTER STUDIES**  
**PAPER 1**  
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**INSTRUCTIONS TO CANDIDATES**

- Write your name and index number and name of your school
- Answer all the questions in Section A
- Answer question 16 and any other three questions from section B
- All answers should be written in the spaces provided on the question paper

**FOR EXAMINER'S USE**

SECTION	QUESTION	CANDIDATE'S SCORE
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
	<b>TOTAL SCORE</b>	

*This paper consists of 12 printed pages. Candidates should check the question paper to  
Ensure that all the pages are printed as indicated and no questions are missing.*

**SECTION A (40 MARKS)**

**Answer all Questions in the spaces provided.**

1. State **three** factors that you would consider before replacing or upgrading a computer memory (3mks)  
(i) .....  
.....  
(ii) .....  
.....  
(iii) .....  
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2. State **three** characteristics of a well designed and developed software. (3mks)  
(i) .....  
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(ii) .....  
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(iii) .....  
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3. List **two** web programming languages. (2mks)  
(i) Javascript, PHP,  
.....  
(ii) .....  
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4. Explain three parts of a task bar. (3mks)  
(i) .....  
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(ii) .....  
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(iii) .....  
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5. Define (2mks)  
(i) Base band  
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.....  
ii) Broad band  
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6. (a) Define the term artificial intelligence (1mk)  
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- .....
- (b) List four areas where artificial intelligence is applicable. (2mks)
- (i) .....
- (ii) .....
- (iii) .....
- (iv).....

7. State three ways of moving round the page in a desktop publishing window (3mks)
- (i) .....
- .....
- (ii) .....
- .....
- (iii) .....
- .....

8. Differentiate between the following (4mks)
- (i) Insert mode and type over mode.
- .....
- .....
- .....
- .....

9. State two ways in which horticultural farmers can benefit from the use of information and communication technology. (2mks)
- .....
- .....
- .....

10. Name three mouse clicking techniques. (3mks).
- .....
- .....
- .....

11. State two disadvantages of networking. (2mks)
- .....
- .....
- .....

12. A student presented a budget in the form of a worksheet as follows.

A	B	
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1	ITEM	AMOUNT	
2	Fare	200	
3	Stationary	50	
4	Bread	300	
5	Miscellaneous	150	
6	Total		

a) Write a formula to get the total in B6 (1mk)

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 .....

b) State the expression that would be used to obtain the least expenditure. (1mk)

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 .....

c) Distinguish between filtering and sorting (1mk)

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13. Differentiate between bound and unbound control (2mks)

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 .....

14. Identify the most appropriate data types for this fields (4mks)

- (i) Name.....
- (ii) Admission Number .....
- (iii) Fees.....
- (iv) Date

15. What is program documentation (1mk)

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 .....

### SECTION B (60 marks)

**Answer question 16 and any other three questions from this section in the spaces provided.**

16. Tusaidiane Savings Society (T S S) pays 5% interest on shares exceeding 100,000 shillings and 3 % on shares that do not meet this target .However no interest is paid on deposits in the member's T S S bank account.

Design

(a) An algorithm for the program that would (7mks)

- (i) Prompt the user for shares and deposit of a particular member.

- (ii) Calculate the interest and total savings.
- (iii) Display the interest and total savings on the screen for a particular member of the society.

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(b) Using a flow chart. (8mks)

17. (a) The following are some of the phases in the systems development life cycle (SDLC)

system analysis, system design, system implementation, system review and maintenance .

State four activities that are carried out during the system implementation phase (4mks)

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(b) Give three reasons why system maintenance phase is necessary in SDLC (3mks)

To ensure that:

- i). System efficiency is maintained for the changing functional environment & requirements.
- ii). User expectations are satisfied.
- iii). The system caters for growth in application requirements.
- iv). The system adapts to new changes in the company's organization.
- v). System operation is based on the facilities of the current technological development.
- vi). External influences beyond the organization's control are adhered to by the system, e.g., Government policies on taxation, allowances, etc.

(c) State two instances where observation is not viable method of gathering information during system analysis stage (2mks)

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(d) Various considerations should be made during input design and output design. State three considerations for each case (6mks)

(i) Input design.

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(ii) Output design.

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18. (a) One of the functions of an operating system is job scheduling. Explain what is meant by Job scheduling. (2mks)

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(b) List and explain three types of user interfaces. (6mks)

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(c) Describe the following categories of software. (4mks)

(i) Firmware.

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(ii) Proprietary software.

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(d) A new company ABC intends to go into business of desktop publishing. Advice the company on three computer hardware specification features to consider as a measure of enhancing performance. (3mks)

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19 (a) Convert the decimal number  $0.5625_{10}$  into its binary equivalent. (5mks)

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(b) Find the sum of

$$\begin{array}{r} 00110_2 \\ + \\ 01101_2 \\ \hline \end{array}$$

(c) Using the ones complement, calculate  $31_{10} - 17_{10}$  in binary form. (5mks)

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20. (a) Define the term network topology (2mks)

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(b) Name two advantages and two disadvantages of ring topology (4mks)

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(c) Name five components of the fibre optic cable. (5mks)

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(d) Other than the ring topology name other 4 types of topologies. (4mks)

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***END***